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ABSTRACT

A large body of literature examines the effects of goal setting on performance. However, relative to the amount of research examining the goal setting-performance relationship, there has been little investigation of dispositional influences on goal commitment. Understanding why people become committed to goals is important because commitment is a necessary component for goal setting intervention success. A laboratory study examined the effects of three components of need for achievement on goal commitment. It was predicted that need for mastery, need for work, and competitiveness are related to goal commitment. Fifty-two undergraduate students performed nine trials of a complex task and completed a need for achievement scale composed of four subscales. Results of regression analyses revealed that need for mastery influenced goal commitment. No effect was found for work or competitiveness on goal commitment. Similarly, an effect on performance was only obtained for need for mastery. High needs for mastery people are attraction to situations that are: (1) challenging; and (2) test their capabilities. Therefore, they are more likely to report higher levels of goal commitment because a properly set goal provides an opportunity to demonstrate mastery of a challenging situation. The results of this research show that it is useful to consider components of need for achievement. (LLL)

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The Impact of Need for Achievement Components on Goal Commitment

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Abstract

A laboratory study examined the effects of three components of need for achievement on goal commitment. It was predicted that need for mastery, need for work, and competitiveness are related to goal commitment. Fifty-two undergraduate students performed nine trials of a complex task and completed a need for achievement scale composed of four subscales. Results of regression analyses revealed that need for mastery influences goal commitment.

Introduction

There is a large body of literature that examines the effects of goal setting on performance. Goal setting has been found to enhance performance under a variety of conditions (Locke, Shaw, Latham & Saari, 1981; Tubbs, 1986). However, relative to the amount of research examining the goal setting - performance relationship, there has been little investigation of dispositional influences on goal commitment. Understanding why people become committed to goals is important because commitment is a necessary component for goal setting intervention success (e.g., Erez & Kanfer, 1983; Erez & Zidon, 1984; Locke, Latham, & Erez, 1988).

Need for achievement (nAch) is one dispositional characteristic that may be related to goal commitment. Need for achievement may be generally defined as the desire to attain challenging and difficult standards. High nAch people are individuals who strive to continually improve their performance. Conversely, low nAch individuals are content to perform without showing marked improvement.

Need for achievement is posited to influence goal commitment. Hollenbeck and Klein's (1987) model indicates that high need for achievement affects goal commitment through the attractiveness of goal attainment. Goals that are specific and difficult are expected to be more attractive to high nAch people than low nAch people. The reason for this is that high nAch people like to perform at levels that are challenging. To be considered challenging, a performance standard must be specifically described. Vague goals or the absence of a goal do not offer the high nAch person a standard against which to compare their performance.

Researchers have examined the role of need for achievement in goal setting theory. However, research has yielded conflicting results (Hollenbeck & Brief, 1987). For example, Arvey and Dewhirst (1976) found nAch did not moderate the goal setting - job satisfaction relationship. However, in this research, satisfaction pertained to the job as a whole, not satisfaction with the task or the goal setting intervention. Moreover, the goal setting measure consisted of employee perceptions of how their supervisors practiced principles associated with MBO programs, thus limiting generalizations to other goal setting intervention. Similarly, Dossett, Latham, & Mitchell (1979) and Yukl & Latham (1978) found that nAch had no effects on performance. However, conclusions are constrained by the low reliability of the 10-item nAch measure used in the two investigations. However, Hollenbeck, Williams, & Klein (1989) did find a relationship between nAch and goal commitment. They examined the effects of two situation variables (goal publicness and goal origin) and two personal factors (nAch and locus of control) on goal commitment. They found that need for achievement was positively related to goal commitment. Moreover, goal commitment was a function of the interaction between goal origin and nAch. Need for achievement was related to goal commitment in the self-set condition, but not in the assigned goal condition. For those in the self-set goal conditions, high nAch people reported higher goal commitment than low nAch people. Finally, Hollenbeck & Brief (1987) also found that nAch was related to goal commitment. More specifically, nAch was positively related to both goal expectancy and goal valence.

One explanation for the conflicting results regarding the relationship between need for achievement and goal commitment may be the different

conceptualizations and measurements of need for achievement used in previous studies. That is, the scales used in two studies (Dossett, et al., 1979; Yukl & Latham 1978) had low reliabilities which may have accounted for the lack of results. Further, the two studies using more reliable scales (Hollenbeck & Brief, 1987; Hollenbeck, et al., 1989) did obtain significant results.

Another interesting feature of these two studies is that the scale used defined nAch as a unitary construct. An extension to this work is to examine whether a multiple components construct of nAch produces similar results.

Helmreich and Spence (1978) offer a multiple component approach to conceptualizing and measuring nAch. They propose four related but separate components that comprise nAch. Need for mastery is conceptualized as the desire for intellectual challenge. Need for work refers to the degree to which the individual desires to work hard. Competitiveness refers to the desire to succeed in competitive interpersonal situations. Finally, personal unconcern refers to attitudes about the possible negative interpersonal consequences of achievement.

Three nAch components are examined in this study: need for mastery, need for work, and competitiveness. Personal unconcern was omitted for reasons discussed in the Method section. All three components are expected to be positively related to goal commitment. For example, higher need for mastery people may be more committed to goals than low need for mastery people provided that the goals are specific, challenging, and attainable. In effect, the goal may provide a comparator which motivates people to reduce discrepancies between their behavior and a standard (Campion & Lord, 1982).

H_1: Higher need for mastery people report higher levels of goal commitment than lower need for mastery persons.

Similarly, high need for work persons may be more committed than low need for work individuals, particularly to goals that demand high levels of effort.

H_2: Higher need for work people report higher levels of goal commitment than lower need for work persons.

Finally, individuals with a high need for competitiveness want to surpass the performance of others. However, in the absence of others they may satisfy that need by competing with the standard provided by the goal.

H_3: Higher need for competition people report higher levels of goal commitment than lower need for competition persons.

Similarly, different need for achievement components are expected to be positively related to task performance. Dossett, Latham, & Mitchell (1979) and Yukl & Latham (1978) found no effect on performance, but this could be explained by low scale reliabilites. Also, performance effects may be obtained using a multiple components construct of nAch.

H_4: Higher need for mastery people perform at higher levels than lower need for mastery persons.

H_5: Higher need for work people perform at higher levels than lower need for work persons.

H_6: Higher need for competition people perform at higher levels than lower need for competition persons.

Method

Subjects

Data were collected from 30 male and 22 female undergraduate students of a southwestern state university. Their average age was 23. Participation in the study was voluntary, and all subjects received course credit for their participation.

Task

Subjects performed a computerized simulation of an air traffic controller task. The simulation focused on basic activities performed by air traffic controllers in the context of landing planes safely. The essential components of the task involved moving planes in the hold pattern. The objective of the task was to land as many planes as possible while considering factors such as the size of the aircraft, the length of the runway, and wind direction. Performance score points were allotted for landing planes and deducted when an error was made (e.g., crashing an aircraft). Feedback (i.e., performance score points) was provided continuously during task performance.

Measures

Need for Achievement.

Three of the four scales from the Work and Family Orientation (WOFO) Scales (Helmreich & Spence, 1978) were used to assess three components of achievement motivation (Helmreich & Spence, 1978). The Need for Mastery scale contains eight items; Need for Work consists of six items; and Competitiveness contains five items. Helmreich and Spence report scale reliabilities (Cronbach's alpha) of .61 for Mastery, .66 for Work, and .76 for Competitiveness based on a sample of 607 male college students. The fourth

WOFO scale, Personal Unconcern was originally considered in the study. However, because the reliability coefficients reported by Helmreich and Spence were low (alpha = .50), this scale was omitted from the analyses. Reliabilities were recalculated for the current study using 390 college students. Similar reliabilities were obtained: Cronbach's alpha = .62 for Mastery, .56 for Work, and .72 for Competitiveness. The subjects used in the current study were drawn from this larger sample. For the purposes of some analyses, a median split was used to classify subjects into high and low need for achievement groups on each of those scales.

Goal commitment.

Goal commitment was assessed using a four-item Likert scale. Scale values ranged from 1 to 7. The items were: 1) To what extent is attaining the assigned goal important to you? 2) How much effort are you willing to put forth to attain the assigned goals? 3) How committed are you to achieving the goal? 4) How unhappy would you be with yourself if you failed to achieve the assigned performance goal on the next trials? The scale demonstrated adequate reliability (alpha = .75).

Performance.

Performance was operationalized as performance score points. Performance scores were available for three blocks of trials. Block 1 was performance averaged across Trials 2 and 3; Block 2 across Trials 4 through 6; and Block 3 across Trials 7 through 9.

Procedure

Subjects worked at individual computerized work stations. Task instructions, provided via the computer, explained the task rules and

mechanics of task performance. Subjects performed one practice trial after which a goal was assigned and a goal commitment scale was administered. Subjects performed eight additional trials. Goals were assigned again prior to performance Trials 4 and 7. Goal commitment was assessed when new goals were provided (i.e., prior to Trial 4 and Trial 7). Task perception measures were completed after each trial.

In this study, goals were based on the performance score points of each trial. The difficult yet attainable goal was set to be attainable by 25% of the subjects. A pilot study (N = 15) was conducted to determine the performance score levels which 25% of the people reached or exceeded by the end of Trial 3, Trial 6, and Trial 9. These performance score levels (770, 900, and 940 performance score points) served as the first, second, and third goal assignments in the present study. The goal assignment instructions indicated the score goal and stated that to achieve that performance score individuals needed to work quickly, remember the rules, and make few or no errors. Subjects were not told that only 25% of the people were expected to reach or exceed the goal. However, the goal assignment was assumed to appear difficult to subjects given their knowledge of their own performance levels on the baseline trial. Moreover, subjects reported perceived goal difficulty following each goal assignment.

Results

Goal level manipulation

The percent of the subjects attaining the goals was examined to determine if the goals were difficult and challenging. Twenty-five percent (25%) of the subjects attained the goal (770 points) in Trial 3, 27% attained

the goal (900 points) in Trial 6, and 42% attained the goal (940 points) in Trial 9. These percentages were similar to the 25% attainment of the pilot data. The higher attainment rate in Trial 9 might be explained by the small number of pilot subjects.

Perceived goal difficulty

Perceived goal difficulty was assessed following each goal assignment. Subjects perceived the goal as very difficult for each goal assignment (first assignment M = 6.27, SD = 1.29; second assignment M = 6.44, SD = 1.13; third assignment M = 5.98, SD = 1.76).

Effects of nAch on goal commitment

Hypotheses 1 through 3 were tested by regressing goal commitment on need for achievement for each scale. In support of Hypothesis 1, the results revealed a significant effect for need for mastery on goal commitment for each goal assignment (see Table 1). The analysis indicates that higher need for mastery is associated with greater goal commitment. A median split was then used to classify subjects into high and low nAch groups for ease of interpretation. The means, shown in Table 2, illustrate the effect of nAch on goal commitment.

Insert Table 1 about here

Results did not support Hypotheses 2 and 3. No significant effects were found for need for work or competitiveness on goal commitment for any of the three goal assignments.

Insert Table 2 about here

The median split used to classify subjects into high and low nAch groups facilitated an examination of possible explanations for the results. T-tests were used to demonstrate that the median split effectively separated high and low nAch groups. The results indicated that a median split effectively classified subjects into different groups (see Table 3). However, examination of the data also revealed that while no skew is found for need for mastery or competitiveness, scores on need for work are skewed. Half of the subjects received scores between 22 and 24 while remaining scores ranged from 14 to 21. The skewed data may explain the lack of a need for work effect on commitment.

Insert Table 3 about here

An alternate explanation for the lack of a need for work effect may relate to the combined effects of task and perceived goal difficulty. That is, need for work may be satisfied through task performance itself; the addition of a goal assignment may decrease goal commitment. To examine this, a post hoc analysis was conducted, regressing perceived goal difficulty on need for work. The results indicated that higher need for work was associated with greater perceived goal difficulty for each goal assignment, providing some support for this alternate explanation (see Table 4). Moreover, a similar analysis conducted on need for mastery suggests that the combined effects of task and goal difficulty may be detrimental only to need for work.

Insert Table 3 about here

Effects of nAch on performance

Hypotheses 4 through 6 were tested by regressing performance (cumulative performance score) on nAch for each scale. The results revealed a significant effect for need for mastery on performance in Block 1 (Beta = .32, R^2 = .10, $F(1, 50) = 5.76$, $p < .05$), providing partial support for Hypothesis 4. Higher need for mastery was associated with higher performance. Effects were not significant in Block 2 (Beta = .26, R^2 = .07, $F(1, 50) = 3.58$, $p < .06$) or in Block 3 (Beta = .22, R^2 = .05, $F(1, 50) = 2.48$, $p = .12$). No effects were found for Need for Work or Competitiveness.

Discussion

The present research examined the effects of dimensions of need for achievement on goal commitment. The results provide support for the first prediction, but not the second or third. Need for mastery was found to be related to goal commitment. However, no effect was found for need for work or competitiveness on goal commitment. Similarly, an effect on performance was only obtained for need for mastery.

High need for mastery people are attracted to situations that are challenging and test their capabilities. Therefore, they are more likely to report higher levels of goal commitment because a properly set goal provides an opportunity to demonstrate mastery of a challenging situation. In sum, goal setting interventions result in reported higher commitment levels in high need for mastery people because the goal serves as a standard against which

people can determine if the task was mastered.

Need for work did not exhibit the expected effects. One possible explanation relates to the combined effects of task and goal difficulty. Across trials, subjects perceived the task as very difficult (M = 5.51, SD = 1.05) based on their responses to a seven-point Likert task difficulty item. Given the difficult nature of the task, the high need for work people may have had the need satisfied through the task itself. Thus, the addition of a goal assignment perceived as difficult may have been detrimental. Indeed, higher need for work people perceived the goal as more difficult than lower need for work subjects, suggesting that task difficulty and goal difficulty may jointly affect goal commitment. high need for work people were not more committed to the goal than those who were low in the need because the need for work was already satisfied.

Unfortunately, another explanation may be more plausible. That is, range restriction may limit the conclusions one can draw from the current study regarding need for work. Half of the subjects participating in the study had very high need for work scores (i.e., between 22 and 24 out of a maximum score of 24). This could reflect the fact that students had volunteered to participate in research; although course credit is provided, participation is an optional class activity. Additional research is needed using a sample demonstrating a wider range of values to better understand the effects of need for work on goal commitment.

Similarly, competitiveness did not relate to goal commitment. Possibly, competing with other performers may have been more important than expected. In this task, there was no one to compare one's own performance with.

Competing against oneself does not appear to take the place of competing against others for those who have a high need for interpersonal competition. Here also additional research is needed to examine the effects of competitiveness, especially using task situations which provide an opportunity to compete against others.

Three other issues limit the generalizations one can make from this study. First, the task was very complex. Subsequent research should also examine the effects of nAch components using a simpler task. Alternately, the number of trials performed on the task could be increased. Perhaps additional task practice should be provided prior to the administration of a goal.

Second, while the subjects performed the task nine times, the trials occurred within a 3-hour period. This time period may not have been sufficient for examining goal commitment. It is unclear how rapidly goal commitment changes in response to attainment and failure to attain goals. Future research might employ a design where trials occur over days or weeks.

Third, the goals were assigned instead of being self-set. This may have had the effect of attenuating the effects of the nAch components on goal commitment (Weiss & Adler, 1984). Future research is needed examining the effects of nAch components on self set goals (cf. Hollenbeck, et al., 1989). Studies manipulating goal origin are also needed.

The present research makes two contributions to the literature. First, the results are interesting in that different need for achievement components exhibited different results. The results of the research show that it is useful to consider components of need for achievement. Thus, how components of need for achievement relate to goal components becomes an important issue

for future research.

The results of the research are also important for a second reason. Much of the goal setting literature has focused on performance. While this is certainly an important issue, why people become committed to goals in goal setting interventions remains less well understood. The present study increases understanding by showing that need for mastery is a dispositional factor that can affect commitment to goals. It also replicates previous research demonstrating need for achievement effects in goal setting programs (e.g., Matsui, Okada, & Kakuyama, 1982) and extends previous research by using a more complex task.

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Table 1

Effects of Regressing Goal Commitment on Need for Mastery.

Scale Administration	Beta	R^2	F
First Goal Assignment	.47	.21	13.64**
Second Goal Assignment	.44	.19	12.04**
Third Goal Assignment	.42	.18	10.78**

* $p < .05$. ** $p < .01$.

Table 2

Means and Standard Deviations for Goal Commitment.

Scale	High nAch		Low nAch	
Administration	M	SD	M	SD
	Need for Mastery			
First Goal Assignment	22.57	3.40	19.62	4.54
Second Goal Assignment	22.39	3.83	19.38	5.43
Third Goal Assignment	23.17	3.85	19.89	5.01
	Need for Work			
First Goal Assignment	20.77	3.88	21.08	4.75
Second Goal Assignment	20.35	4.81	21.08	5.22
Third Goal Assignment	21.32	4.36	21.42	5.23
	Competitiveness			
First Goal Assignment	20.87	3.84	20.97	4.69
Second Goal Assignment	20.74	4.98	20.69	5.07
Third Goal Assignment	21.59	4.88	21.59	4.78

Table 3

T-Tests, Means and Standard Deviations for High and Low nAch Groups Classified using a Median Split.

	High nAch		Low nAch		
Scale	M	SD	M	SD	t
Need for Mastery	24.7	2.83	18.4	2.66	-8.31**
Need for Work	23.0	0.80	19.0	1.57	-11.55**
Competitiveness	16.9	1.49	10.3	2.59	-10.91**

* $p < .05$. * $p < .01$.

Table 4

Effects of Regressing Perceived Goal Difficulty on nAch.

Scale Administration	Beta	R^2	F
	Need for Work		
First Goal Assignment	.50	.25	16.89**
Second Goal Assignment	.29	.08	4.47*
Third Goal Assignment	.32	.10	5.79*
	Need for Mastery		
First Goal Assignment	.33	.11	6.22*

* $p < .05$. ** $p < .01$.